

AMENDMENTS TO THE CLAIMS:

The following listing of claims replaces all prior listings and versions of claims in this application.

1. (Currently amended) A vertebral arthroplasty prosthesis, comprising:
a first support member having a first anterior-posterior and lateral pivotal axis;
a second support member having a second anterior-posterior and lateral pivotal axis; and
an articulation member, including:
a first articulation portion having a first pivotal joint member in pivotal association with the first support member for pivoting at the first pivotal axis, and
a second articulation portion having a second pivotal joint member in pivotal association with the second support member for pivoting at the second pivotal axis,
wherein the first and second articulation portions are ~~translatable~~
associated with each other for translation with respect to each other at a location between the first and second articulation portions to translate the first ~~and second~~ support member[[s]] ~~and, first~~
pivotal axes joint member, and first pivotal axis with respect to ~~each other~~ the second support member, second pivotal joint member, and second pivotal axis;
wherein the first support member, articulation member, and second support member are configured for cooperatively supporting vertebrae on either side of the prosthesis of a spinal column; and
wherein the prosthesis is configured such that, when implanted in the spinal column, the articulation member is disposed in a location corresponding to an intervertebral disk.
2. (Previously presented) The prosthesis of claim 1, wherein the articulation member is configured for limiting a translational movement along lateral and an anterior-posterior directions to a predetermined range.
3. (Previously presented) The prosthesis of claim 2, wherein the articulation member is configured for limiting a pivotal movement along both the first pivotal axis and the second pivotal axis to a predetermined range.

4. (Cancelled).

5. (Cancelled).

6. (Previously presented) The prosthesis of claim 1, wherein the first and second articulations portions are translatable with respect to each other to translate the first and second support members and pivotal axes with respect to each other substantially uncoupled from pivotal movement of the first and second support members.

7. (Previously presented) The prosthesis of claim 1, wherein the first and second pivotal joint members are configured to provide universal pivoting of the first and second support members about the first and second pivotal axes, respectively.

8. (Previously presented) The prosthesis of claim 1, wherein the support members have corresponding joint members that are associated with the first and second pivotal joint members to provide a ball and socket joint for pivoting about each of the first and second pivotal axes.

9. (Cancelled).

10. (Currently amended) The prosthesis of claim 1, wherein the articulation member is configured to permit relative axial rotation between the ~~contacting~~ support members.

11. (Previously presented) The prosthesis of claim 1, wherein the second support member comprises a body prosthetic portion, the prosthesis having an axial height corresponding approximately to the height of a vertebra.

12. (Currently amended) An arthroplasty prosthesis, comprising:
first and second support members configured for ~~engaging~~ cooperatively supporting opposing articulated bones, the first support member having a first at anterior-

posterior and lateral pivotal axis, and the second support member having a second anterior-posterior and lateral pivotal axis; and

first and second articulation ~~members~~ portions, the first articulation ~~member~~ portion having a first pivotal joint member in pivotal association with the first support member for pivoting at the first pivotal axis, and the second articulation ~~member~~ portion having a second pivotal joint member in pivotal association with the second support member for pivoting at the second pivotal axis, wherein the first and second articulation portions are in sliding contact with each other between the first and second pivotal joint members to permit translation of the first and second support members and pivotal joint members with respect to each other,

wherein ~~the first support member, first articulation member, second support member, and second articulation member are configured for cooperatively supporting vertebrae on either side of the prosthesis, and the prosthesis is configured such that, when implanted in the spinal column, the articulation member portions are~~ is disposed in a location corresponding to an intervertebral disk.

13. (Currently amended) The prosthesis of claim 12, wherein one of the first support member and the first articulation ~~member~~ portion defines a protrusion extending generally along an axis extending between the support members, and the other defines a recess configured for receiving the protrusion to pivotally associate the first support member and the first articulation ~~member~~ portion.

14. (Currently amended) The prosthesis of claim 13, wherein one of the second support member and the second articulation ~~member~~ portion defines a protrusion, and the other defines a recess configured for receiving the protrusion to pivotally associate the second support member and the second articulation ~~member~~ portion.

15. (Previously presented) The prosthesis of claim 13, wherein at least one of the recess and protrusion is tapered substantially about a spinal axes that extends axially between the support members.

16. (Currently amended) The prosthesis of claim 12, wherein the first and second articulation ~~members~~ portions comprise blocking members juxtaposed radially with

respect to a spinal axes that extends axially between the support members for abutting each other to limit the translational movement therebetween.

17. (Currently amended) The prosthesis of claim 16, wherein the blocking members comprise:

a key extending from one of the articulation ~~members~~ portions; and

a keyway defined in the other articulation ~~member~~ portion in which the key is received for translational movement, the keyway having an edge wall disposed to block the translational movement of the key.

18. (Original) The prosthesis of claim 17, wherein the edge wall and key are annular.

19. (Original) The prosthesis of claim 17, wherein the edge wall comprises two edge walls disposed on opposite sides of the keyway such that the key and edge wall concurrently contact at least two locations to block the translational movement of the key within the keyway.

20. (Cancelled)

21. (Currently amended) The prosthesis of claim 12, wherein the first and second articulation ~~members~~ portions are ring shaped with a hollow center.

22. (Currently amended) The prosthesis of claim 21, further comprising a retaining member associated with the support members and extending through the hollow center of the articulation ~~members~~ portions to retain the articulation ~~members~~ portions in the association with the support members.

23. (Original) The prosthesis of claim 22, wherein the retaining member comprises a suture.

24. (Currently amended) The prosthesis of claim 21, wherein at least one of the support members comprises a post extending into the hollow center of at least one of the articulation ~~members~~ portions for retaining the at least one articulation ~~member~~ portion in said association with the support member associated therewith.

25. (Currently amended) The prosthesis of claim 12, wherein the second support member comprises ~~further comprising~~ a body prosthetic portion ~~disposed between the first and second articulation members~~, such that the support members are pivotally and translationally moveable with respect thereto.

26. (Previously presented) The prosthesis of claim 1, wherein the first support member comprises a first bone contacting member configured for engaging first vertebra of the spinal column, the first contacting member comprising:

a fastener mount portion configured for attaching a bone fastener thereto; and
vertebral contacting surfaces disposed and oriented for positioning an apophyseal ring of the first bone with respect to the fastener mount portion in an attachment position for attaching the fastener from the fastener mount portion through the apophyseal ring to attach the first contacting member to the first bone.

27. (Cancelled)

28. (Original) The prosthesis of claim 26, wherein the fastener mount portion defines an opening for receiving a threaded surgical fastener therethrough.

29. (Original) The prosthesis of claim 28, wherein the fastener mount portion is oriented for inserting the fastener diagonally into the apophyseal ring.

30. (Cancelled)

31. (Original) The prosthesis of claim 26, wherein the vertebral contacting surfaces are oriented to capture axial and radial surfaces of the vertebral body for positioning the apophyseal ring in the attachment position.

32. (Cancelled)

33. (Cancelled)

34. (Previously presented) The prosthesis of claim 12, wherein the opposing articulated bones comprise first and second vertebra bodies, each having a respective apophyseal ring, and wherein the first and second support members comprise:

an axial contacting surface oriented to abut and support an axial face of a respective one of the first and second vertebra bodies;

a radial contacting surface configured to abut a radial side of the respective one of the first and second vertebra bodies; and

an apophysis receiving area between the axial and radial contacting surfaces defining an apophysis groove that is disposed and configured for receiving the apophyseal ring of the respective one of the first and second vertebra bodies.

35. (Canceled)

36. (Previously presented) The prosthesis of claim 1, wherein at least one of the support members and articulation member is made of a radiolucent material such that the visibility of the prosthesis during X-ray, M.R.I. or C.T. scan is reduced.

37. (Previously presented) The prosthesis of claim 36, wherein the support members comprise radiopaque marks visible in an MRI, CT scan, or x-ray.

38. (Previously presented) The prosthesis of claim 36, wherein each of the support members is substantially radiolucent.

39. (Cancelled)

40. (Currently amended) An arthroplasty prosthesis for implantation in an implantation site between two non-adjacent bones of the axial skeleton, comprising:

a vertebral body prosthetic portion configured for replacing at least one vertebral body of a patient, the body prosthetic portion having an upper body anterior-posterior and lateral pivotal axis and a lower body anterior-posterior and lateral pivotal axis; and

upper and lower disk prosthetic portions, configured to replace at least portions of two intervertebral disks disposed adjacent the replaced portion of the vertebral body, the disk prosthetic portions configured to contact and support axial skeleton bones adjacent the implantation site and being articulated with the body prosthetic portion, the upper and lower disk prosthetic portions respectively having a upper and lower anterior-posterior and lateral pivotal axes; ~~and~~

wherein the upper disk prosthetic portion comprises:

an upper support member having an upper first anterior-posterior lateral pivotal axis, ~~and~~

an upper first articulation portion having an upper first pivotal joint member in pivotal association with the upper support member for pivoting at the first pivotal axis, and

an upper second articulation portion having an upper second pivotal joint member in pivotal association with the vertebral body prosthetic portion for pivoting at the upper body pivotal axis, in contact with the upper first articulation portion between the upper joint members such that the upper first and second articulation portions are translatable with respect to each other; and

wherein the lower disc prosthetic portion comprises:

a lower support member having a second anterior-posterior lateral pivotal axis, ~~and~~

a lower first articulation portion having a lower first pivotal joint member in pivotal association with the lower support member for pivoting at the second pivotal axis, and

a lower second articulation portion having a lower second pivotal joint member in pivotal association with the vertebral body prosthetic portion for pivoting at the lower body pivotal axis, in contact with the lower first articulation portion between the lower joint members such that the lower first and second articulation portions are translatable with respect to each other; and

wherein the body and disk prosthetic portions and the articulation members are associated for cooperatively carrying spinal loads at the implantation site.

41. (Previously presented) The prosthesis of claim 12, wherein at least one of the support members has and is configured to deliver an antibiotic, protein, or biologically active substance to the implantation site.

42. (Cancelled)

43. (Cancelled)

44. (Cancelled)

45. (Cancelled)

46. (Currently amended) The prosthesis of claim 40, wherein both of the ~~of the upper and lower disk portions include~~ a support members are configured for engaging a respective axial skeleton bone[[s]] adjacent the implantation site.

47. (New) The prosthesis of claim 1, wherein the first support member comprises a vertebral contacting member.

48. (New) The prosthesis of claim 1, wherein the second support member comprises a vertebral body prosthetic portion.

49. (New) The prosthesis of claim 1, wherein the second pivotal axis comprises an upper body anterior-posterior and lateral pivotal axis of the second support member, and the second support member comprises a third pivotal axis comprising a lower body anterior-posterior and lateral pivotal axis of the second support member.

50. (New) The prosthesis of claim 49, further comprising:
a third support member having a fourth anterior-posterior and lateral pivotal axis;
a second articulation member, including:

a third articulation portion having a third pivotal joint member in pivotal association with the second support member for pivoting at the third pivotal axis, and

a fourth articulation portion having a fourth pivotal joint member in pivotal association with the third support member for pivoting at the fourth pivotal axis,

51. (New) The prosthesis of claim 50, wherein the third support member comprises a vertebral contacting member.

52. (New) The prosthesis of claim 51, wherein the third and fourth articulation portions are translatable with respect to each other at a location between the third and fourth joint members to translate the second and third support members and pivotal axes with respect to each other.

53. (New) The prosthesis of claim 1, wherein the first and second articulation portions are in sliding contact against each other to allow the translation.